

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001042**Date Inspected:** 02-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2300**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Ye Yongjun, Sha Zhi**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Caltrans Mock-Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Ken Jobes, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, to randomly monitor welding and Quality Control (QC) functions. While on site, the QA Inspector observed and/or discovered the following:

The Caltrans QA Inspector randomly observed the semi-automatic flux cored arc welding (FCAW) of Weld No. MUSB-MA38A/B-9 on the 89M Mock-Up, Skin Plate Sub-Assembly E, shown on Drawing No. MUSB-MA38A/B, Revision 0. The Member I. D. No. was MUSB-MA38A/B-mp544-1. ZPMC's documentation showed both base materials to be ASTM A709 Grade 50 (345) the thicknesses to be 75 mm and 70 mm, which was verified by reviewing the drawing. The Welding Procedure (WPS) being used was WPS-B-T-2231-TC-U5-F and the welder was Li Shuqiang (I. D. No. 053609), whose qualifications for this welding are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 6. The weld was being made in the flat groove (1G) welding position. The QA Inspector observed that CWI Ye Yongjun (CWI No. 07031461) was present during this welding and that ZPMC's documentation of minimum/maximum preheat/interpass temperatures, voltage, amperage, and travel speed were within the ranges specified on the WPS for the one pass welded prior the QA Inspectors random observation. The minimum preheat specified on the WPS was 110° C for non-fracture critical material greater than 60 mm in thickness. The maximum specified interpass temperature was 230 ° C.

The Caltrans QA Inspector also observed the Shielded Metal Arc (SMAW) tack welding of temporary insert to Skin D on the 114M Mock-Up Upper Shaft Assembly. The reference drawing is No. MUC-MA106 B/C, revision 0. These tacks were being made in the overhead fillet (4F) welding position. The tack welder was Feng Nuajun (I.

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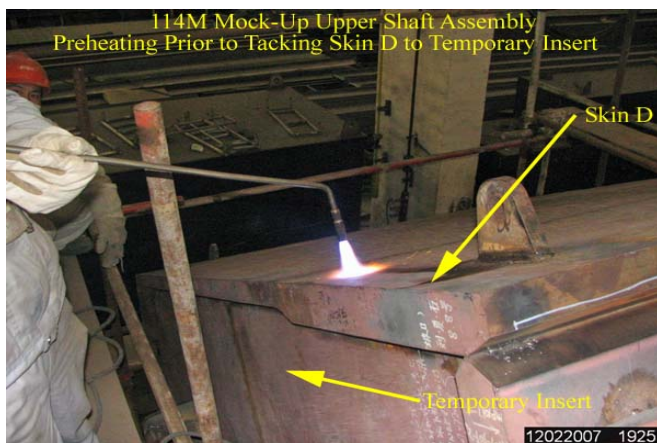
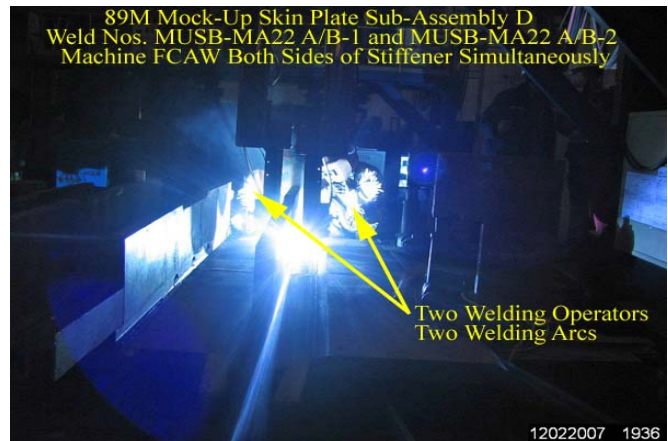
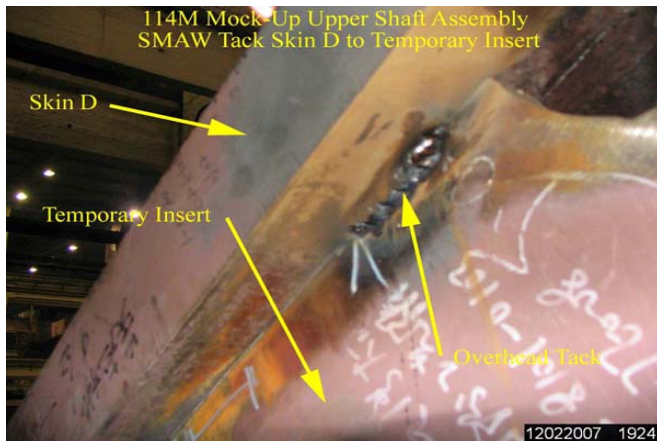
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D. No.066258), who is not listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 6.

This observation does not appear to meet the requirements of the job specifications. All welders, welding operators and tack welders are required to be qualified in accordance with AWS D1.5-2002 and approved. The Master List shows those who are approved

The Caltrans QA Inspector also observed Machine Flux Cored Arc Welding (FCAW) on the 89M Mock-Up, Skin Plate Sub-Assembly D, Weld Nos. MUSB-MA22 A/B-1 and 2. These two welds are opposite sides of a partial joint penetration (PJP) groove weld. They were being welded simultaneously in the horizontal groove (2G) welding position using machine welding equipment. These welds are shown on Drawing No. MUSB-MA22 A/B, Revision C. The welding operators were Ma Zhiyong (I.D. No. 066019) and Chen Ruyang (I.D. No. 066258), whose qualifications for semi-automatic FCAW are listed in ZPMC's Master List of Welders/Welding Operators/Tack Welders, Revision 6. Welding Procedure Specification (WPS) WPS-B-T-2332-TC-P5-F for semi-automatic FCAW was being used for this machine weld. ZPMC CWI, Sha Zhi (CWI No. 07081551) was present during welding.

All observations appeared to meet the requirements of the job specifications except as noted above in the third paragraph.



Summary of Conversations:

As identified within the contents of this report.

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Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Jobes,Kenneth
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Quality Assurance Inspector

Reviewed By:	Cochran,Jim
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QA Reviewer
